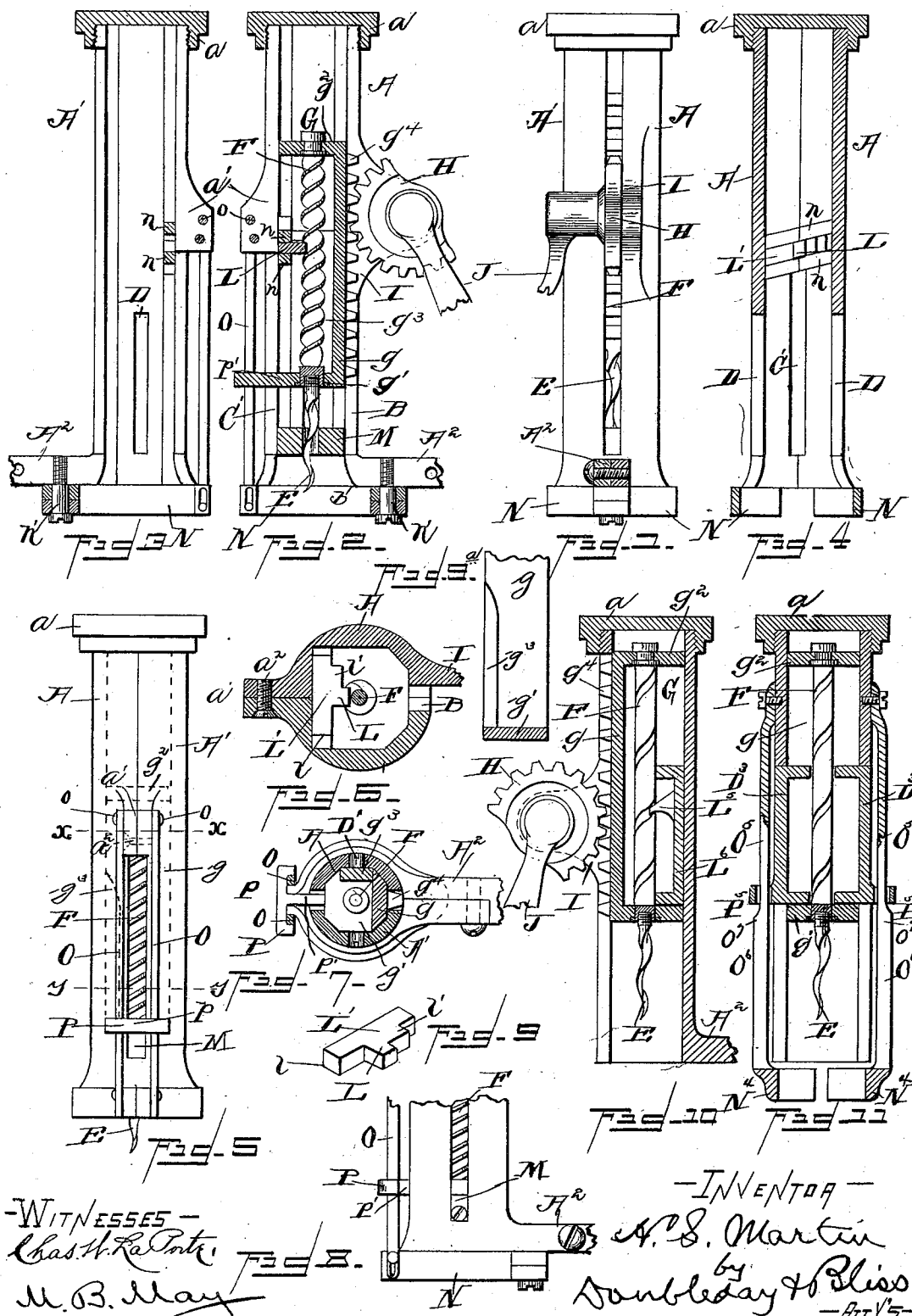


(No Model.)

H. S. MARTIN.
CORK EXTRACTOR.

No. 505,920.

Patented Oct. 3, 1893.



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UNITED STATES PATENT OFFICE.

HARRISON S. MARTIN, OF WASHINGTON, DISTRICT OF COLUMBIA.

CORK-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 505,920, dated October 3, 1893.

Application filed March 10, 1893. Serial No. 465,438. (No model.)

To all whom it may concern:

Be it known that I, HARRISON S. MARTIN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Cork-Extractors, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is an elevation from the rear of a device embodying my improvements. Fig. 2 is a view showing the interior parts of the casing being divided, and some of the contents being shown in section. Fig. 3 is a similar view of the other part of the casing. Fig. 4 is a section of the casing taken at right angles to Figs. 2 and 3. Fig. 5 is a front view. Fig. 6 is a section on the line x, x , of Fig. 5 and on a larger scale. Fig. 7 is a section on the line y, y , of Fig. 5. Fig. 8 is a side view of the bottom part of the device. Fig. 9 is a perspective of the nut and its plate. Fig. 9^a shows detached, the cam plate for moving the nut and holding it in its operative position. Figs. 10 and 11 show a modified form of extractor.

A casing or tube is constructed in such way as to properly support the corkscrew and the parts which operate it and also the parts which hold and support the bottle, this casing being made in two halves or parts A, A' , so as to reduce the cost of the implement by avoiding the necessity of "coring" in casting. The two halves of the tube or casing are firmly joined together by suitable devices such as a screw cap a at the top and ears a', a' , which are fastened together by screws, as at a^2 . The casing parts are so shaped as to provide a slot B in the rear, and a slot C' opposite thereto in the front side, and also slots D in the sides, and these serve purposes to be described below.

A^2 indicates the base piece or pedestal by means of which the implement can be firmly fastened to the table, or other support, and which may be cast integral with one of the casing parts A, A' , or cast partly with one half, and partly with the other. The walls of the interior chamber are flared somewhat at the bottom, as shown at b .

E indicates the cork screw, it being secured to, or formed with the screw stem or shank which rotates it. Preferably it is inserted

into the lower end of the screw F . This screw F is mounted in a vertically sliding frame or carrier G , which is formed with the rear upright bar g , the bottom cross plate g' , the top plate g^2 , and the cam plate g^3 , these parts being preferably all cast integral. The rear vertical bar g has rack teeth g^4 and with these a toothed wheel or segment H engages, the shaft of which wheel is mounted in a bracket I which extends back from the tube or casing.

J indicates a handle which is secured to the wheel or segment H , and by which the latter can be rocked in such way as to throw the frame or carrier G up and down in the casing. The carrier G is formed with bearings in the top and bottom plate g^2 and g' for the mounting of the screw so that the latter is free to rotate relatively to the carrier, and can at the same time be moved bodily up and down with it.

The interior of the rack frame is hollow, or open, and is therefore adapted to permit an advantageous arrangement of the nut which is placed within the said chamber, as will be explained, that is to say the nut can be placed between the ends of the rack frame, vertically. As the carrier G and the screw F move up and down rotation is imparted to the screw during certain parts of its travel as follows. L is a nut of the nature of a pin or short arm projecting outward from one of the casing walls. This nut pin is carried by a plate L , having the guide part l and a shoulder at l' . The part l is fitted in a guide-way formed by ribs n, n , upon one side of the chamber within the casing. The part l is shorter than the guide-way so that the plate and nut pin can slide to some extent. The shoulder at l' is so situated that the plate can be engaged by the cam part g^3 of the vertically sliding frame G , and when such engagement occurs, the nut pin L will be held rigidly in position at the point where it engages with the screw F .

The actions of the parts described will be readily understood. As the carrier G descends the screw F will be rotated because of its engagement with the nut pin L , and such rotating of the screw causes the corkscrew E to perforate and enter the cork in the bottle. But when the movement of the carrier G is reversed and it is thrust upward the pressure of the thread on screw F will compel the nut

pin L to move laterally out of engagement with said thread, the part l of the nut plate being shorter than the guide-way at nn to permit this escaping motion of the nut; and therefore during the first part of the upward motion of the carrier G neither the screw F nor the corkscrew E will be rotated, and hence the cork will be drawn from the bottle. But as soon as the cam plate g^3 comes in contact with the shoulder l' of the nut plate, the latter will be moved back along the guide-way formed by the inclined guides nn , and held in such position that it is compelled to engage with the thread of screw F, and the latter commences to rotate and continues to so rotate during the latter part of the upward travel of the carrier G. This rotation is in a direction opposite to that of the rotation during the descent and therefore the cork screw E will be drawn out from the cork.

For the purpose of holding the bottle firmly during the operation of drawing the cork, I employ laterally movable jaws N, N, so situated that they can be adapted to surround more or less of the neck of the bottle. They are moved by bars O, O with which engage lugs P that are carried by the plunger or carrier G. As shown there is an arm p' which projects through the slot C', and has a cross piece p for supporting these lugs. The bars O O are preferably more or less elastic so that they can act to open the jaws N, and also can apply a yielding pressure to the jaws as the lugs P move down.

M is a stop plate which can rise and fall within certain limits in the bottom part of the chamber in the casing, it having projections D' which fit in the slots D. This plate moves up with the cork as the latter rises, but stops it at the proper point to have the screw withdrawn.

A somewhat modified form of the extractor is shown in Figs. 10 and 11. Here the nut L^5 is attached to a sliding carrier L^6 , which has ribs or projections that fit in grooves or slots D in the side of the casing. It also carries eye-pieces P^5 , or lugs, which engage with the jaw supports or carriers O^5 , O^6 . The jaws N^4 are not pivoted as in Figs. 1 to 4, but can move out and in inasmuch as the spring parts support them entirely. The upper portions O^5 of the jaw carriers are elastic, and at O^7 there are cam-like shoulders, and when the nut carrier L^6 moves down, the eyes P^5 engage with these shoulders and force the jaws N^4 inward, so as to grasp the bottle neck, and they are held in until the nut carrier has reached again the upper end of its play. The nut carrier in this case is somewhat different from the plate used in the other construction, it here consisting of a vertical bar, with a nut projection at L^5 which compels the screw F to rotate at the times that the carrier L^6 is stationary, at the upper and the lower ends of the slots D.

I have found that a nut projection of the character of that shown at L or L^5 is much

superior to those which entirely encircle the screw, as the latter have enlarged wearing and bearing surfaces which increase the friction, and, moreover, unless the parts are fitted very accurately by expensive labor, they frequently tend to bind or cramp in the casing, and in turn, bind upon the screw. A nut like that at L^5 cannot cramp or bind, or become clogged with grit or dirt, or be seriously worn, as it and the thread or groove in the screw are practically self clearing. By having the nut situated inside of a rack frame or carrier like that at G which is hollow or formed with an interior nut chamber, and is movable independently of said carrier, I am able to shorten the mechanism as a whole, and make it more compact than are those which are so arranged as to require that one or more nuts be situated above or below the rack frame.

The spring carriers O or O^5 for the jaws N or N^4 provide a much simpler means for opening and closing the latter than those used in the earlier constructions, as the parts O can, of themselves, perform both of the above described functions, namely imparting inward movement to the jaws, and holding the latter under a yielding pressure. Heretofore employment has been made of a complicated mechanism for accomplishing this purpose it comprising two or more hinged levers, and sliding wedges supplemental to the spring parts. In the present construction two spring bars and a lug are all that are necessary.

What I claim is—

1. In a cork-extractor, the combination with the tubular casing, the rack frame, the toothed wheel for positively lifting and depressing the frame, the screw mounted therein, the nut adapted to slide from one horizontal line to another, and means carried by the rack frame for moving the nut to its operative positions, of the vertically arranged elastic spring carriers secured rigidly to the casing and extending downward by the side thereof, the jaws N connected to the said spring carriers, and lugs O bearing directly against the outer sides of the spring carriers and adapted to bend them, substantially as set forth.

2. In a cork extractor, the combination with the spiral screw, the tubular casing, the toothed gear wheel thereon, the sliding rack frame having an interior chamber, and the operating screw connected to the cork screw and mounted in the top and bottom ends of the rack frame, and longitudinally fixed therein of the sliding nut on one side of the operating screw, and mounted in the chamber in the rack frame between its ends vertically, substantially as set forth,

3. In a cork extractor, the combination with the tubular casing, the gear wheel supported thereon, the sliding rack frame having top and bottom cross bars with the open interior space between them, and the screw supported on said cross bars, of the sliding nut in the said chamber, the laterally movable jaws N,

the springs for imparting inward pressure to said jaws, and the outward projecting lugs carried by the rack frame and engaging with the springs, substantially as set forth.

5 4. In a cork extractor, the combination with a hollow or tubular casing, the vertically sliding rack frame therein, having an open chamber between the top and the bottom cross plates, the screw mounted in the said
10 cross plates and longitudinally fixed therein, the cork worm or screw secured thereto the gear wheel mounted on the said casing, of the nut L arranged to slide transversely of the casing, and the vertically moving cam
15 plate carried by the rack frame, and adapted to move said nut transversely, substantially as set forth.

5. The combination with the tubular casing, the vertically sliding rack frame, the screw mounted therein, and the toothed wheel 20 on the casing engaging with the rack, of the transversely sliding nut L, the inclined guides *n n* between which said nut reciprocates, and the cam plate *g*³ carried by the sliding rack frame and situated in the lower part of the 25 interior chamber therein, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HARRISON S. MARTIN.

Witnesses:

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CHAS. W. LA PORTE.